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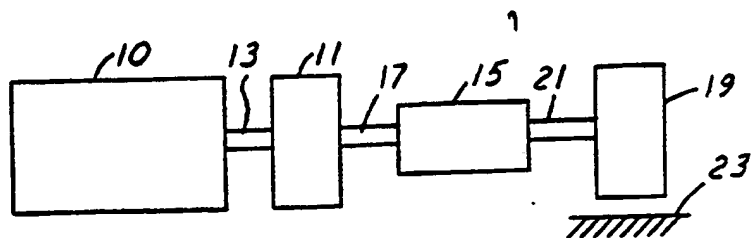
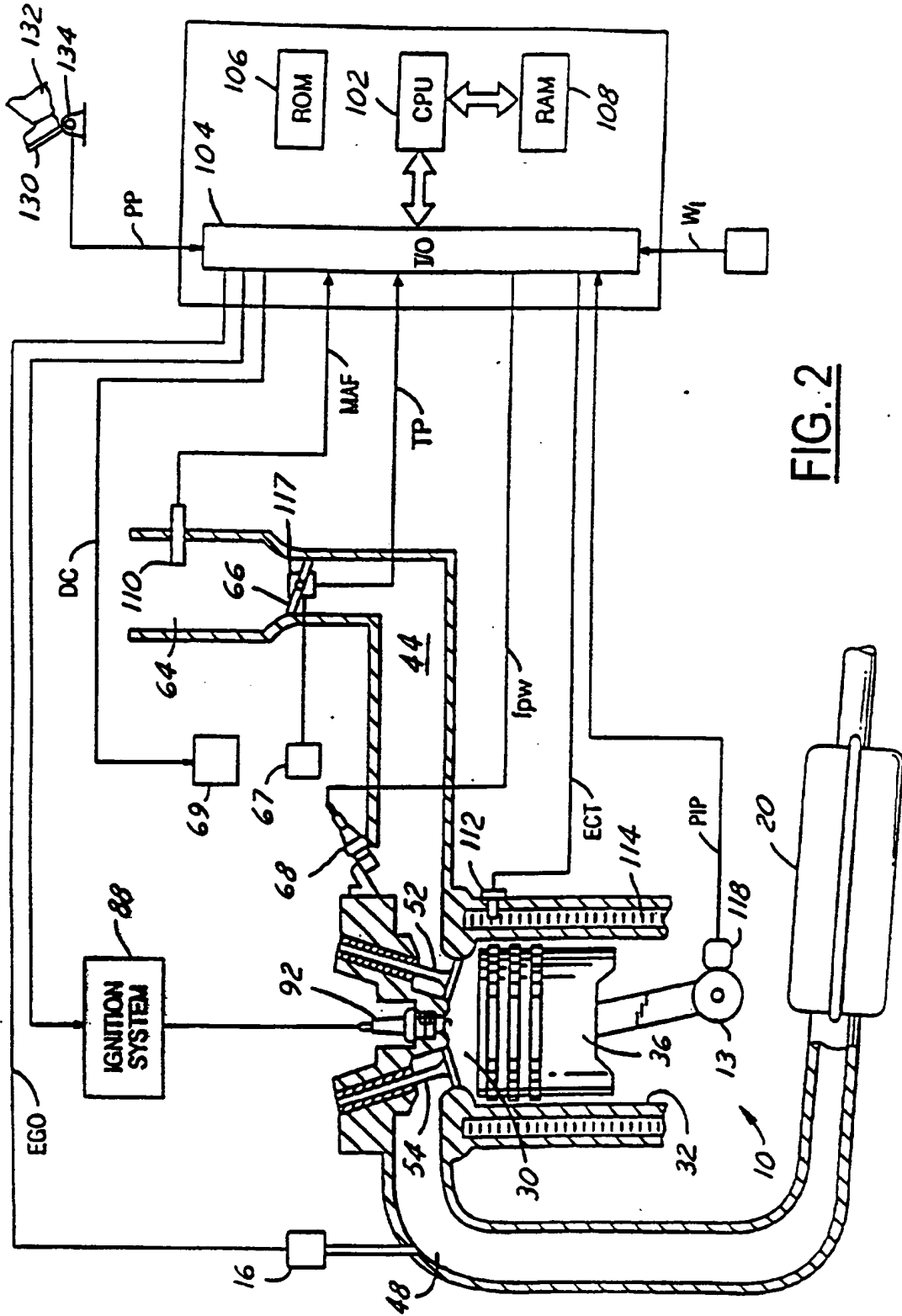


FIG.1



Start

Arbitrate

wheel torque

calculate driver request

$$t_{go-arb-reg} = f(PP, VS) \quad - 310$$

calculate limit output torque ( $t_{go-arb-lim}$ )

312

calculate driver engine torque request for manual transmission and Auto-matic transmission - 314  
Neutral or Park ( $t_{ge-dd-reg}$ )

convert driver wheel torque request and limit torque to engine torque requests

$$t_{ge-arb-reg} = t_{go-arb-reg} * G1 + Loss$$

$$t_{ge-arb-lim} = t_{go-arb-lim} * G1 + Loss$$

316

max of

$t_{ge-dd-reg}$  and  $t_{ge-arb-reg}$

$$t_{ge-arb-reg} = \max \{ t_{ge-dd-reg}, t_{ge-arb-reg} \}$$

318

end

Start

calculate vehicle speed  
trajectory (max allowed  
vehicle speed during a  
tip-out)

410

$$tg\_vs\_des\_mx = f(PRNDL, VS, B00)$$

(SEE FIG 17)

412

APP < 0  
(closed pedal?)

N

Y

414

(A)

rate limit torque request

$$tqe\_daspot = tqe\_daspot - f(tqe\_daspot)$$

torque to a minimum  
of zero

416

$$tqe\_daspot = \max(tqe\_daspot, 0)$$

end

A

430

$$tge\_daspot\_tmp = (tge\_brk\_reg - tge\_dasmf) * f(N)$$

new series?

432

$$tge\_daspot\_tmp > tge\_daspot ?$$

434

$$mul\_tmp = tge\_tc\_dasu$$

436

$$mul\_tmp = tge\_tc\_dasd$$

438

$$tc\_dasf = mul\_tmp * ((tge\_kdas + tge\_daspot) \div (tge\_kdas + tge\_daspot))$$

440

$$filter\_constant\_tmp = f(\Delta t, tc\_dasf)$$

442

$$tge\_daspot = LPF(tge\_daspot, tge\_daspot\_tmp, filter\_constant\_tmp)$$

end

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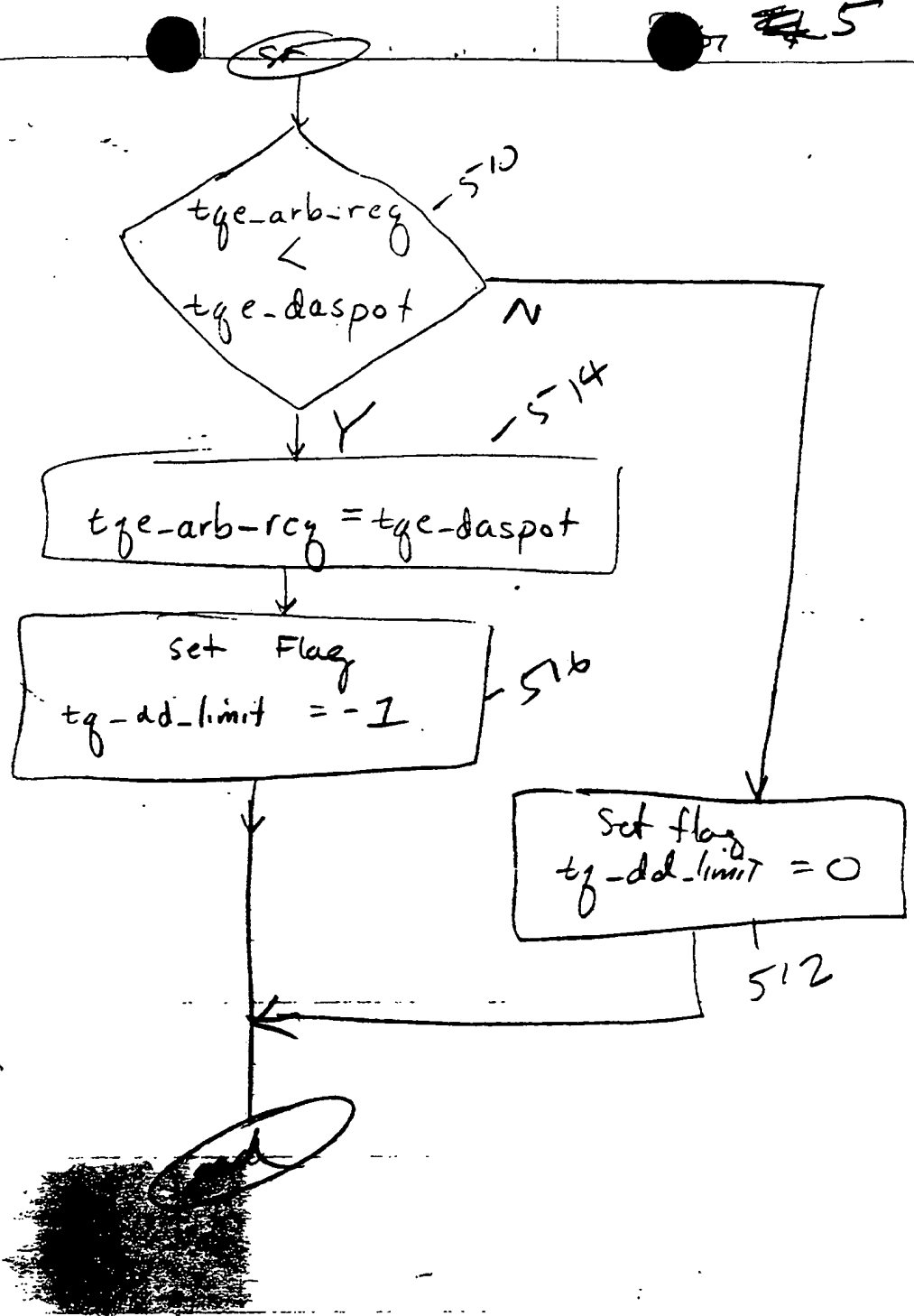
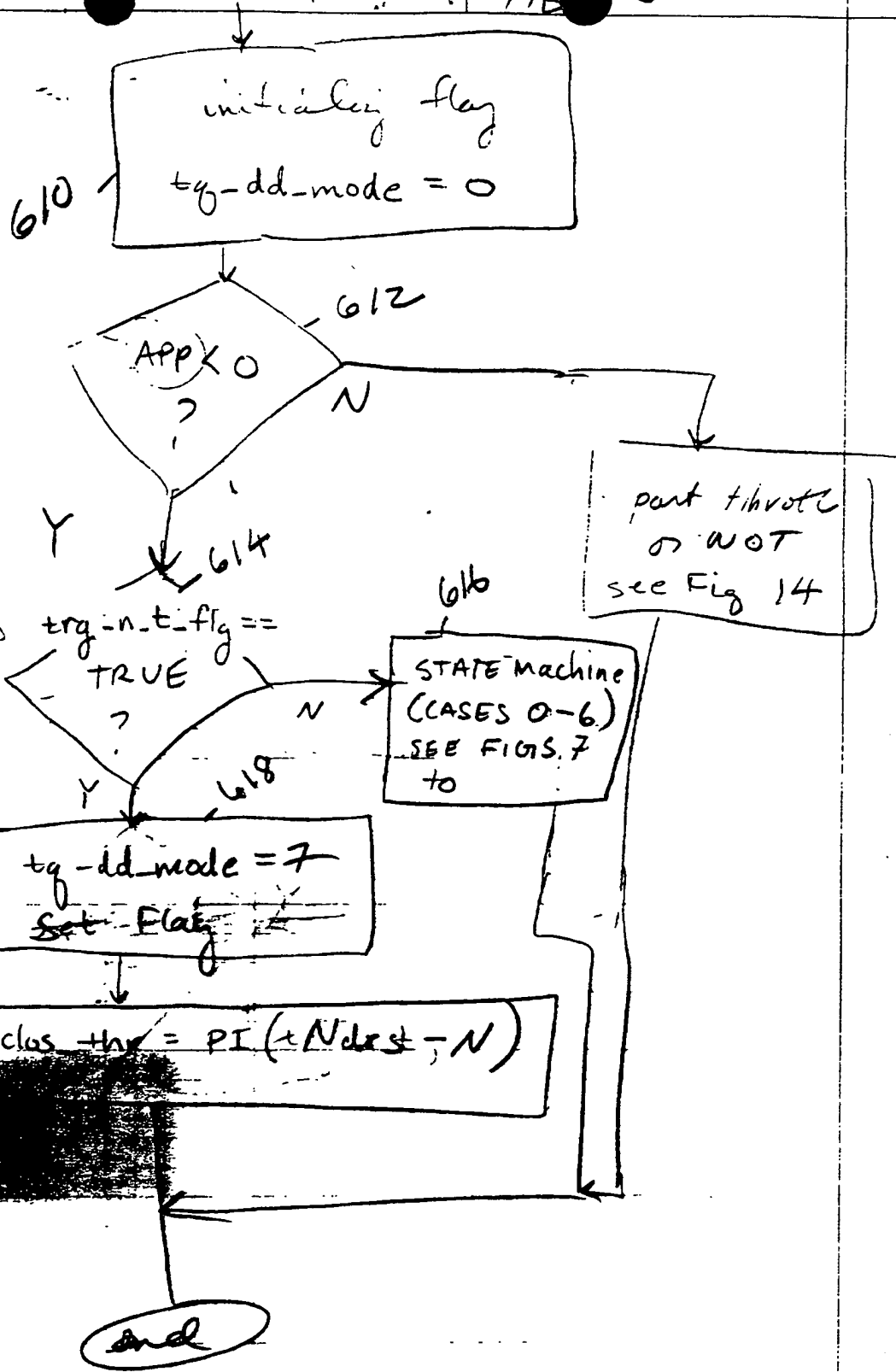
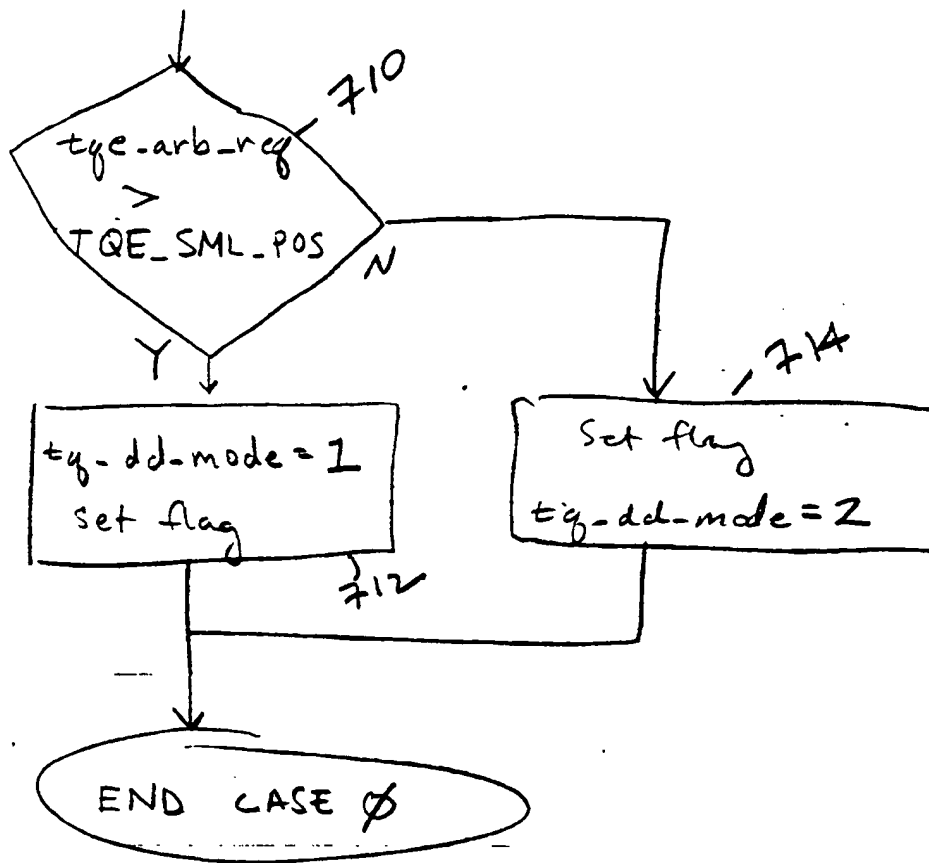


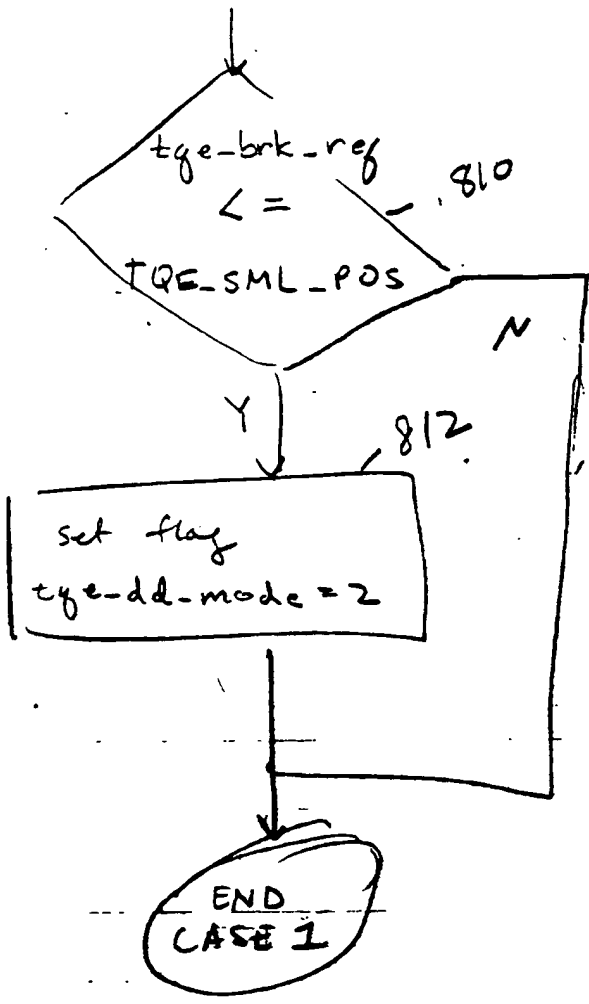
FIG 6





CASE  $\emptyset$ 

CASE 1



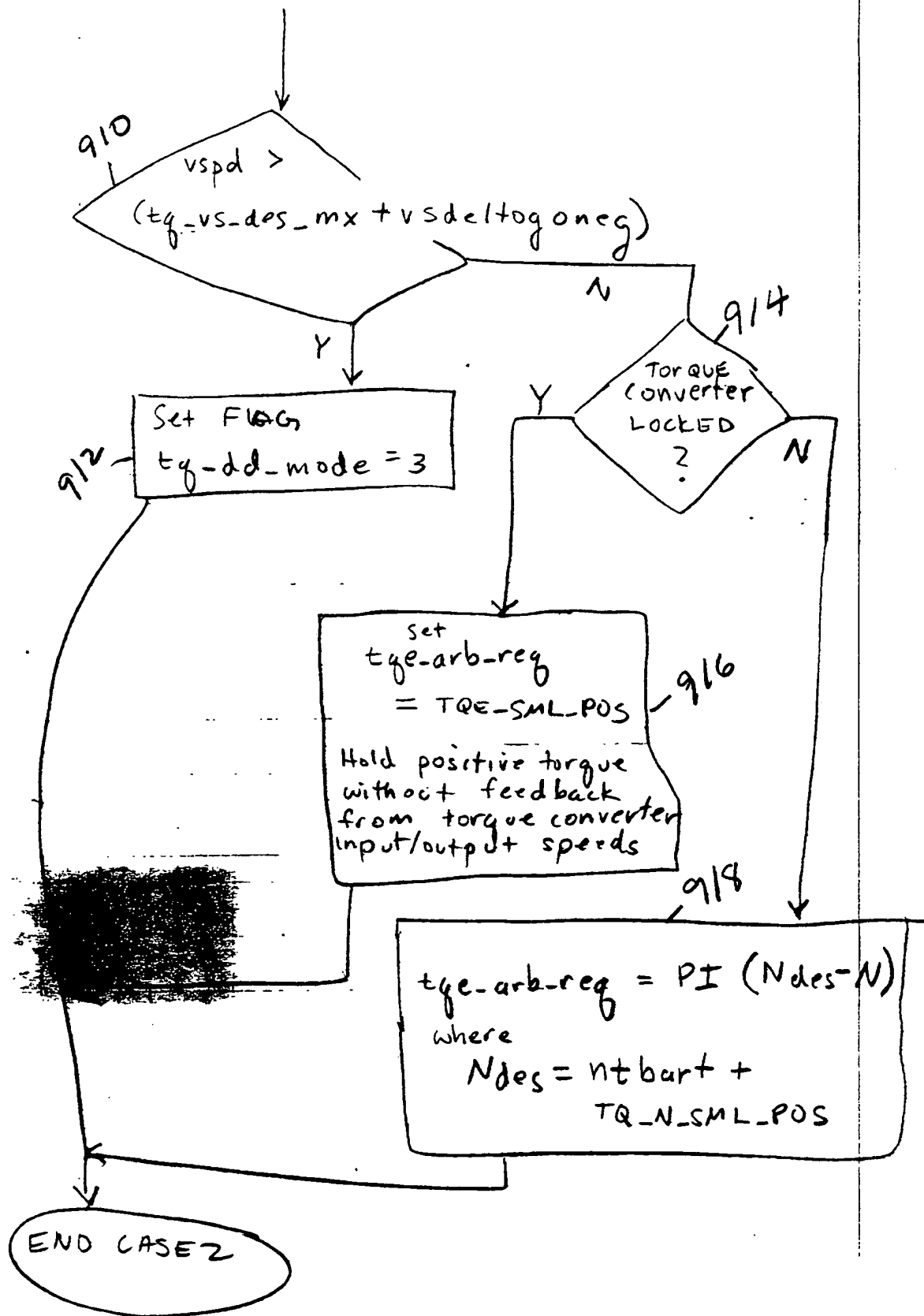
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009260" E4469960



## CASE 2



## CASE 3 ZERO TORQUE CROSSING

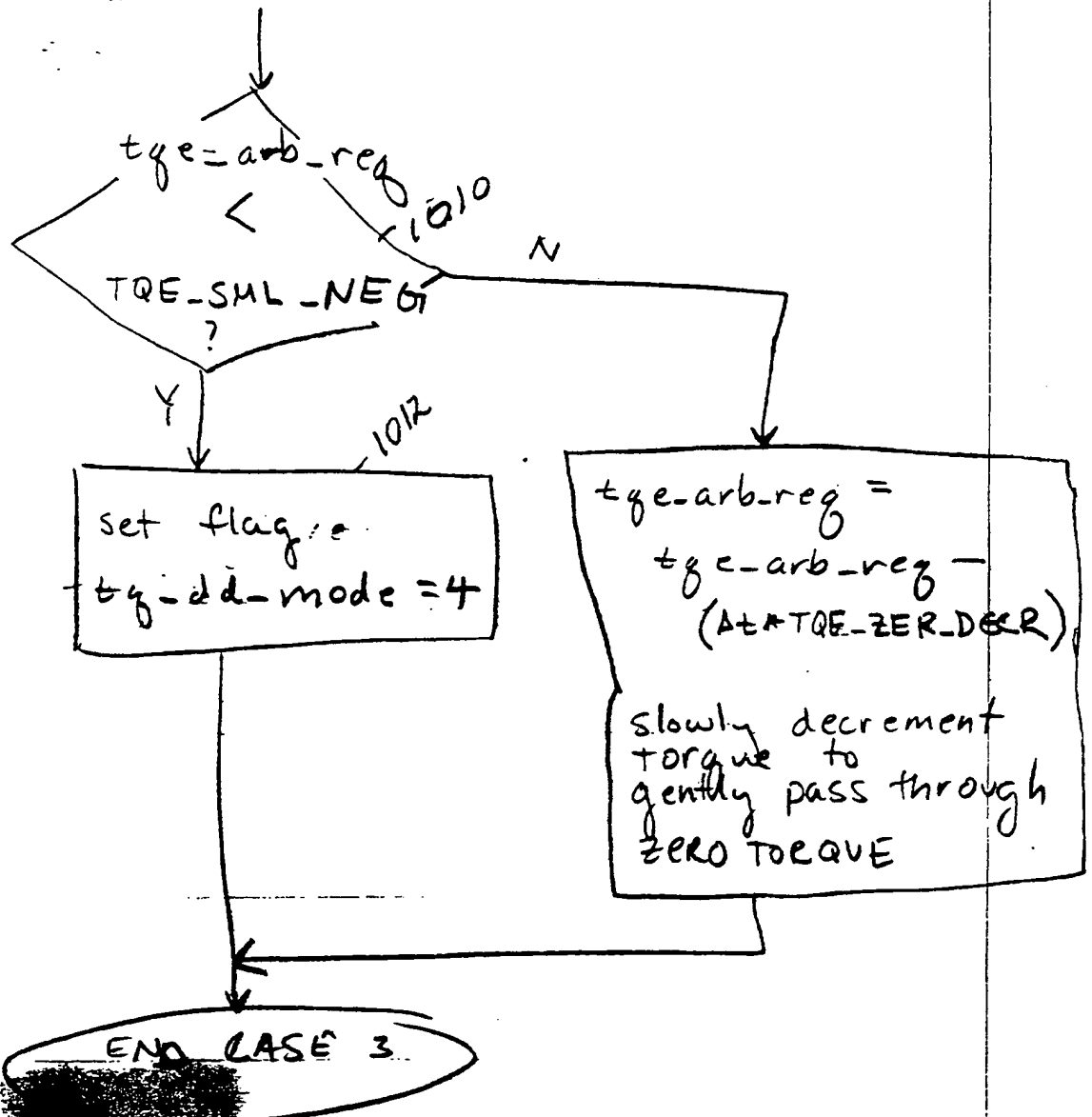
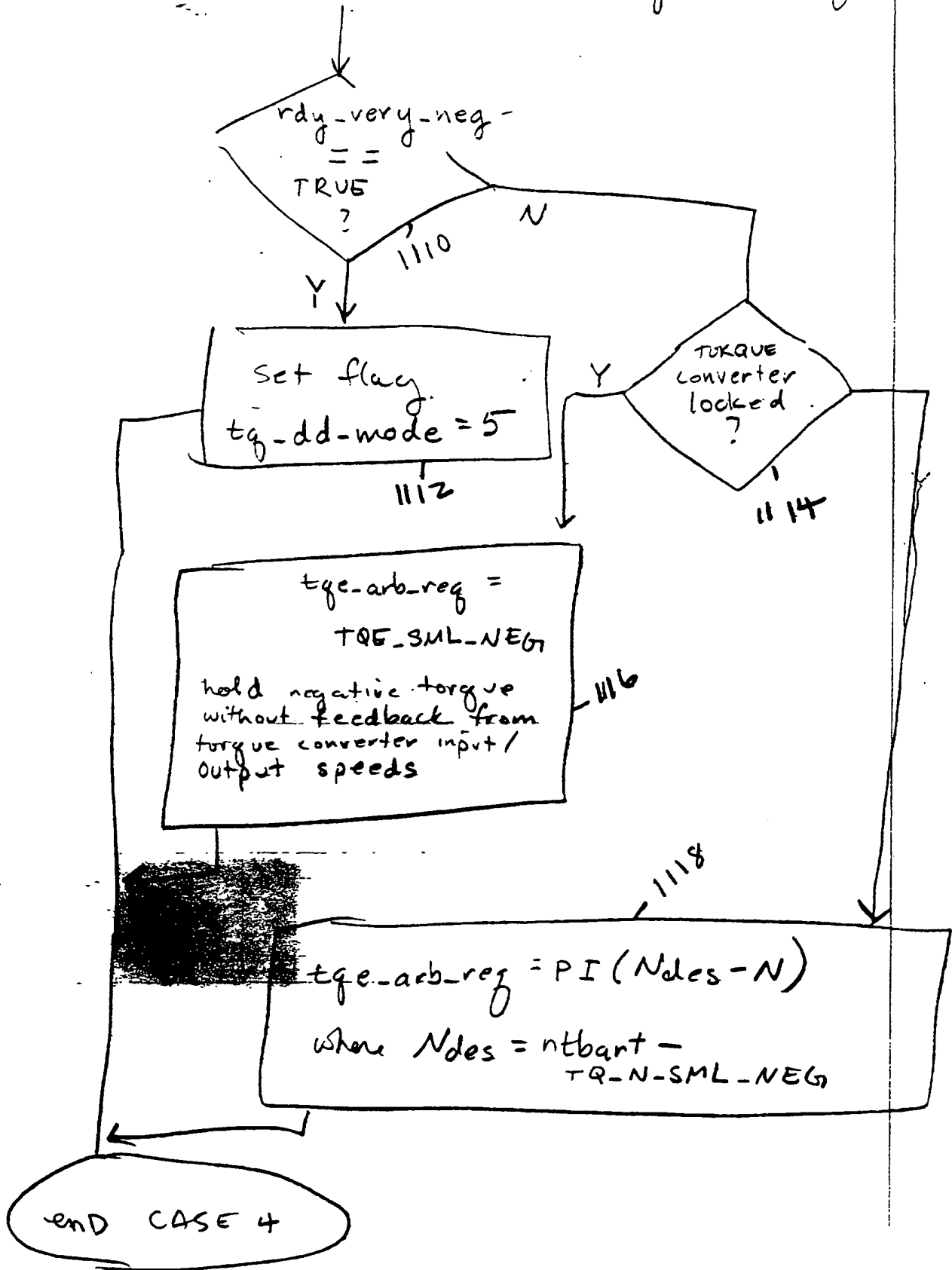
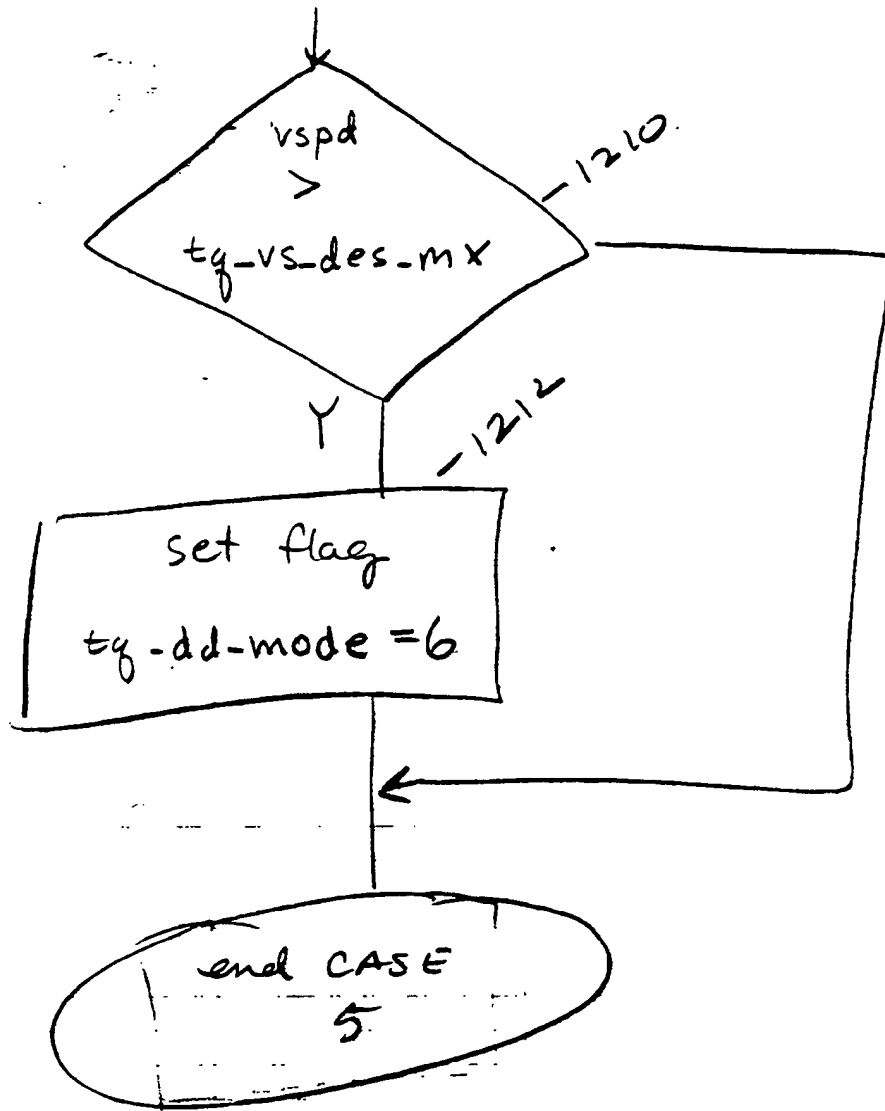


Fig. 11

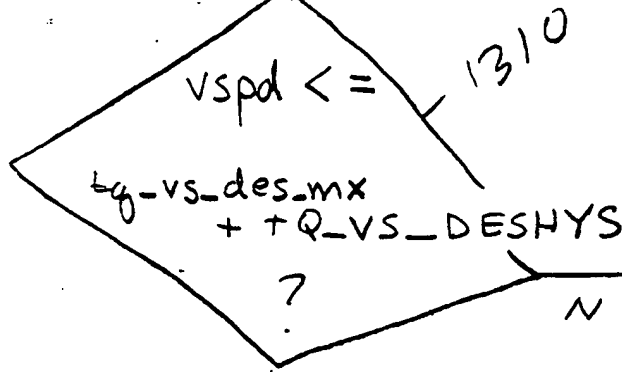
# CASE 4 Hold Negative torque



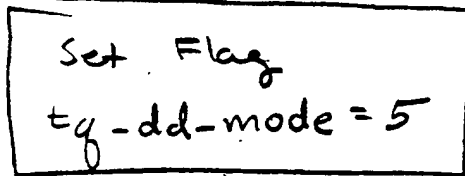
CASE 5



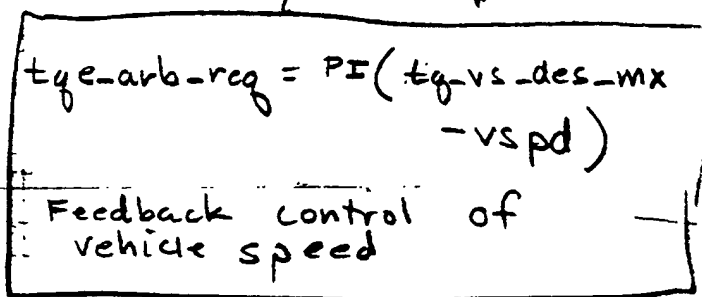
CASE 6



Y



N

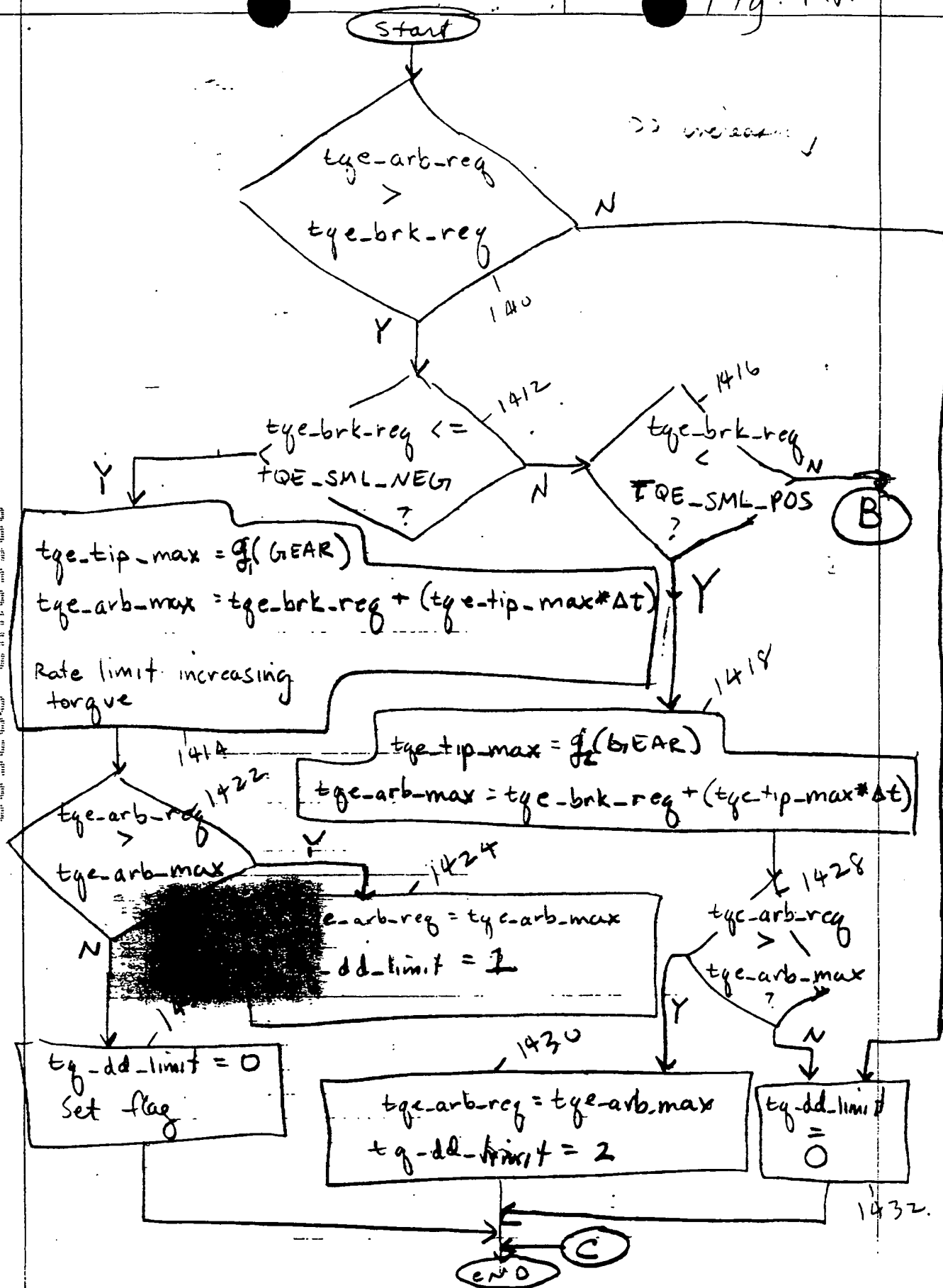


CASE 6

Fig. 14A

National Band

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(B)

1420

$t_{ge\_tip\_max} = q_3 (GEAR)$   
 $t_{ge\_arb\_max} = t_{ge\_brk\_req} + t_{ge\_tip\_max} * \Delta t$

$t_{ge\_arb\_req} > t_{ge\_arb\_max}$

1434

Y

N

1438

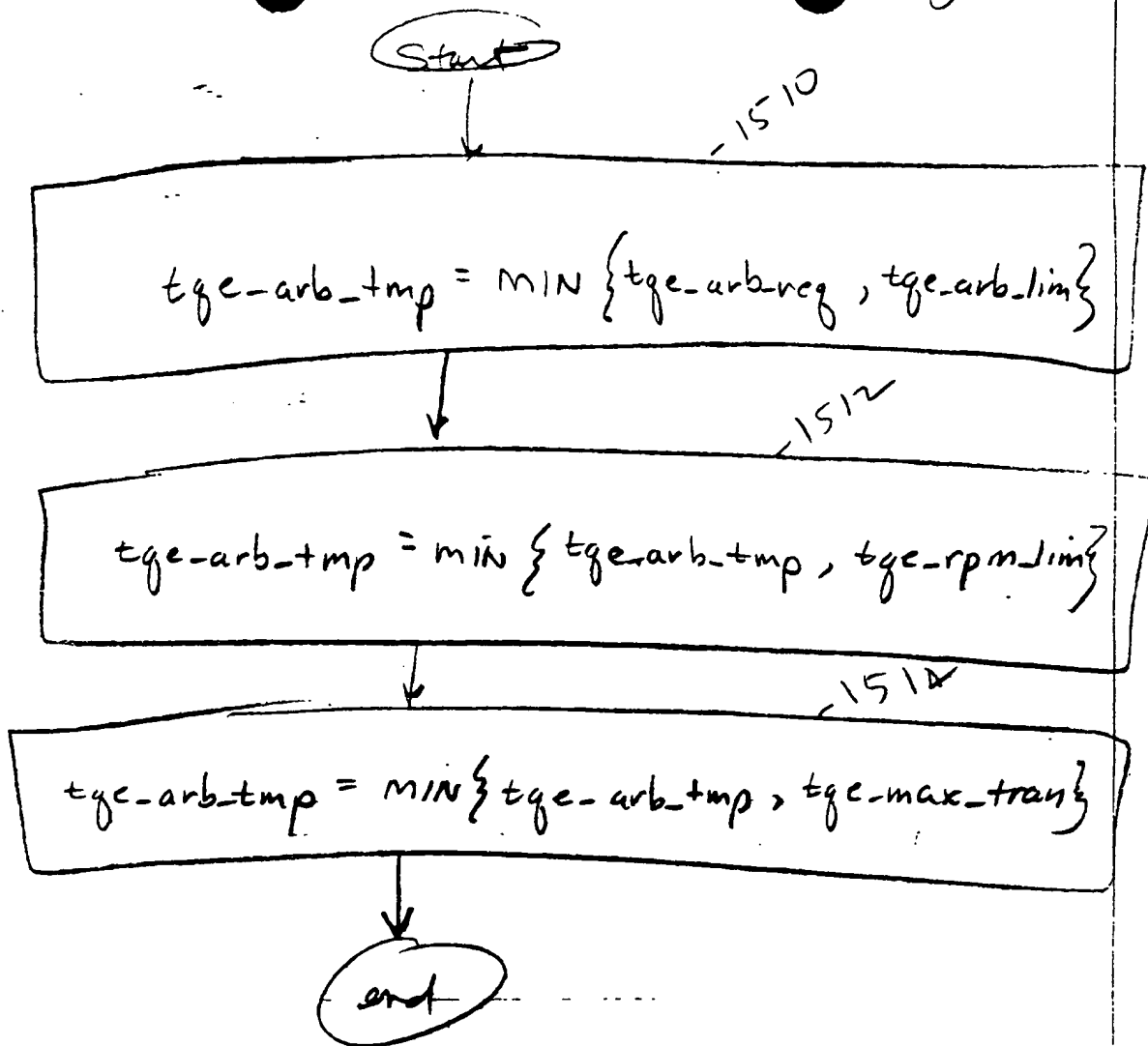
$t_{ge\_arb\_req} = t_{ge\_arb\_max}$   
 $t_{g\_dd\_limit} = 3$

$t_{g\_dd\_limit} = 0$

1436



FIG. 15



START

$$tge\_antistal = h \{ (N_{des} - N), (tq\_source) \}$$

$$tge\_brk\_req = \max(tge\_arb\_tmp, tge\_antistal)$$

$$tge\_minairmf = f(N)$$

$$idle\_am\_mul = h \{ (N_{des} - N), (vspd - minmph) \}$$

$$desmat\_load\_tmp2 = (idle\_am * idle\_am\_mul)$$

$$desmat\_load\_tmp = desmat\_load\_tmp2$$

$$N * numcyi - 0 \div 2 * sar\_chg$$

$$tge\_desmf = desmat\_load\_tmp / TQ\_Z\_LOAD$$

$$tge\_min\_air\_tmp = \max(tge\_minairmf, tge\_desmf)$$

END

1624

C

$$\text{desmaf} = \left( \frac{t_{ge\_min\_air\_tmp}}{t_{g\_2\_load}} \right) * \left( \frac{N * \text{numcyl} - 0}{2} * \text{srchg} \right)$$

1626

$$T_{ge\_min\_air\_brk\_tmp} = t_{ge\_min\_air\_tmp} - t_{ge\_los}$$

1634

$$t_{ge\_brk\_air} = \text{MAX}(t_{ge\_min\_air\_brk\_tmp}, t_{ge\_brk\_reg})$$

D

Fig 16C ~~16C~~

$v_{spd} - \text{min mph}$

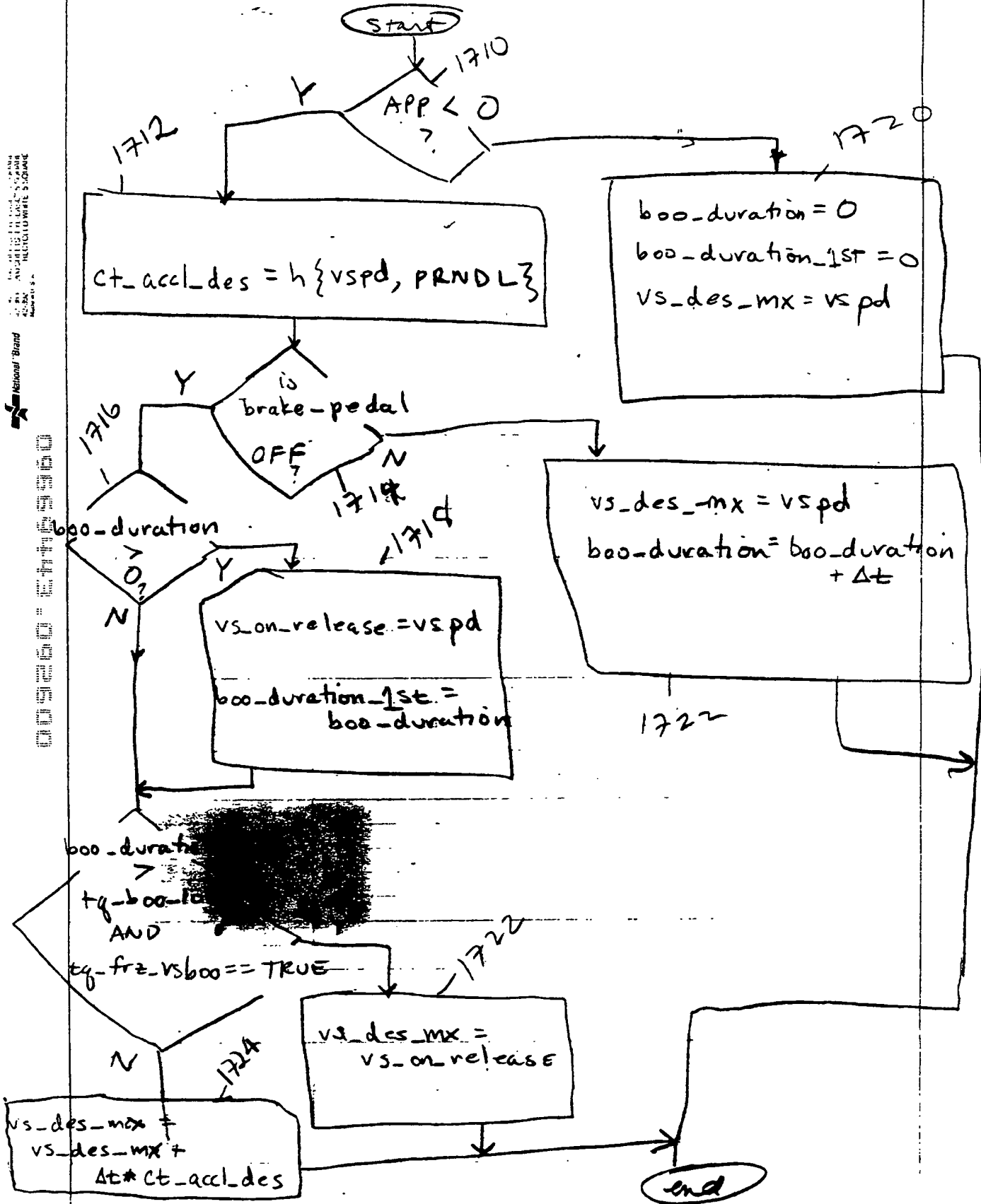
5	...	0	0
6			0
...			...
1	...	6	5

$N - \text{Nodes}$

009250" E4463950



STEP OF FIGURE 4



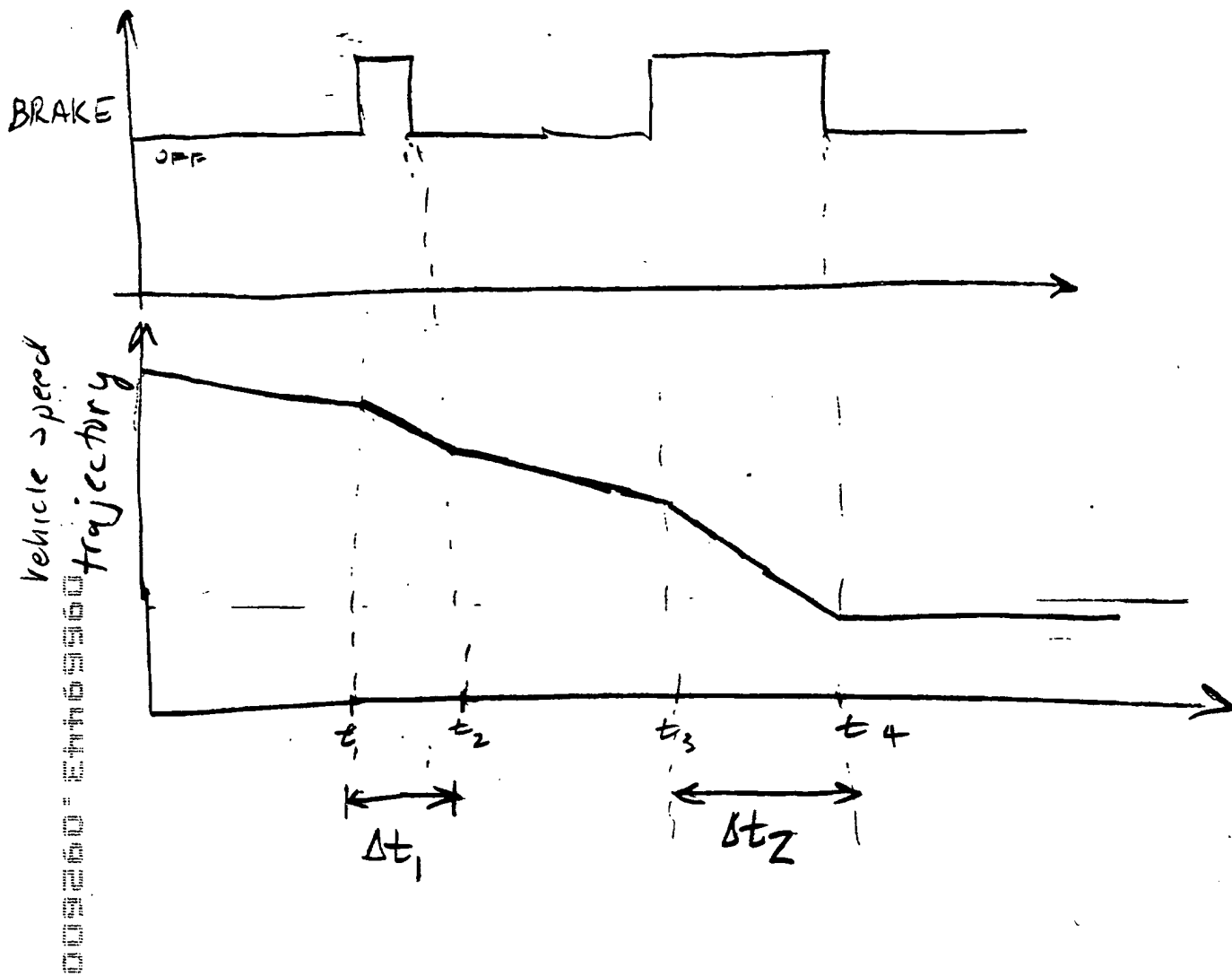
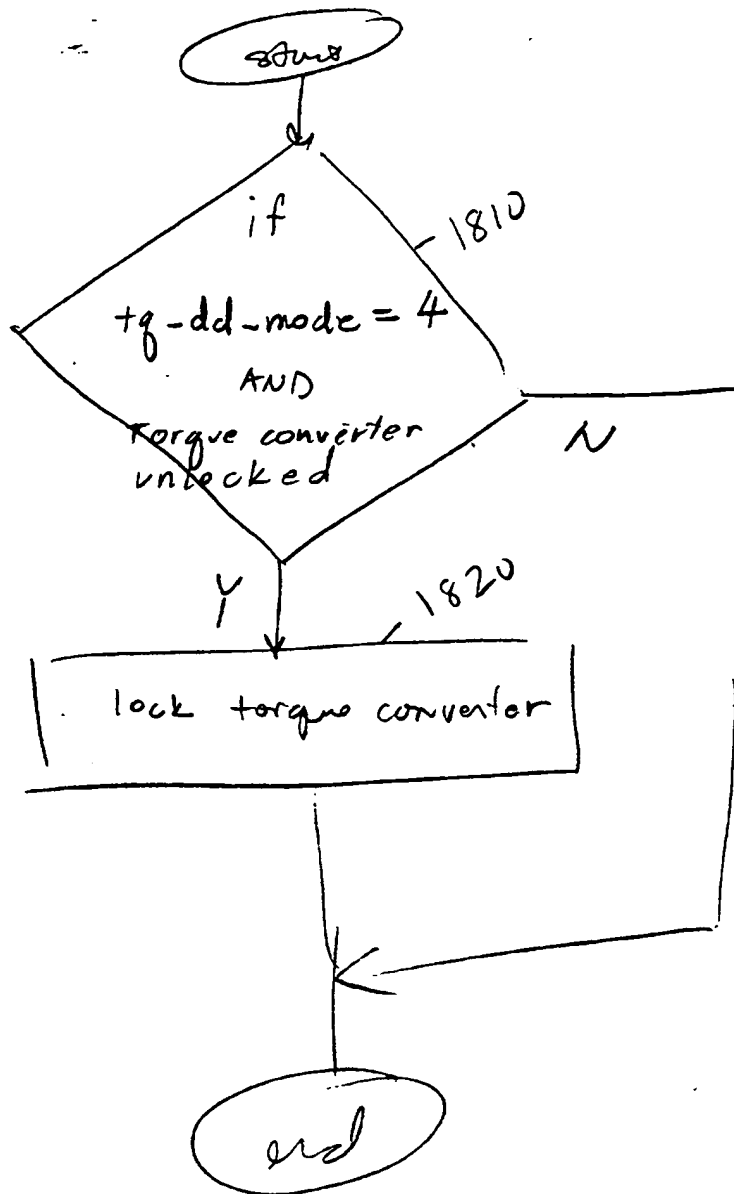


Fig 17B

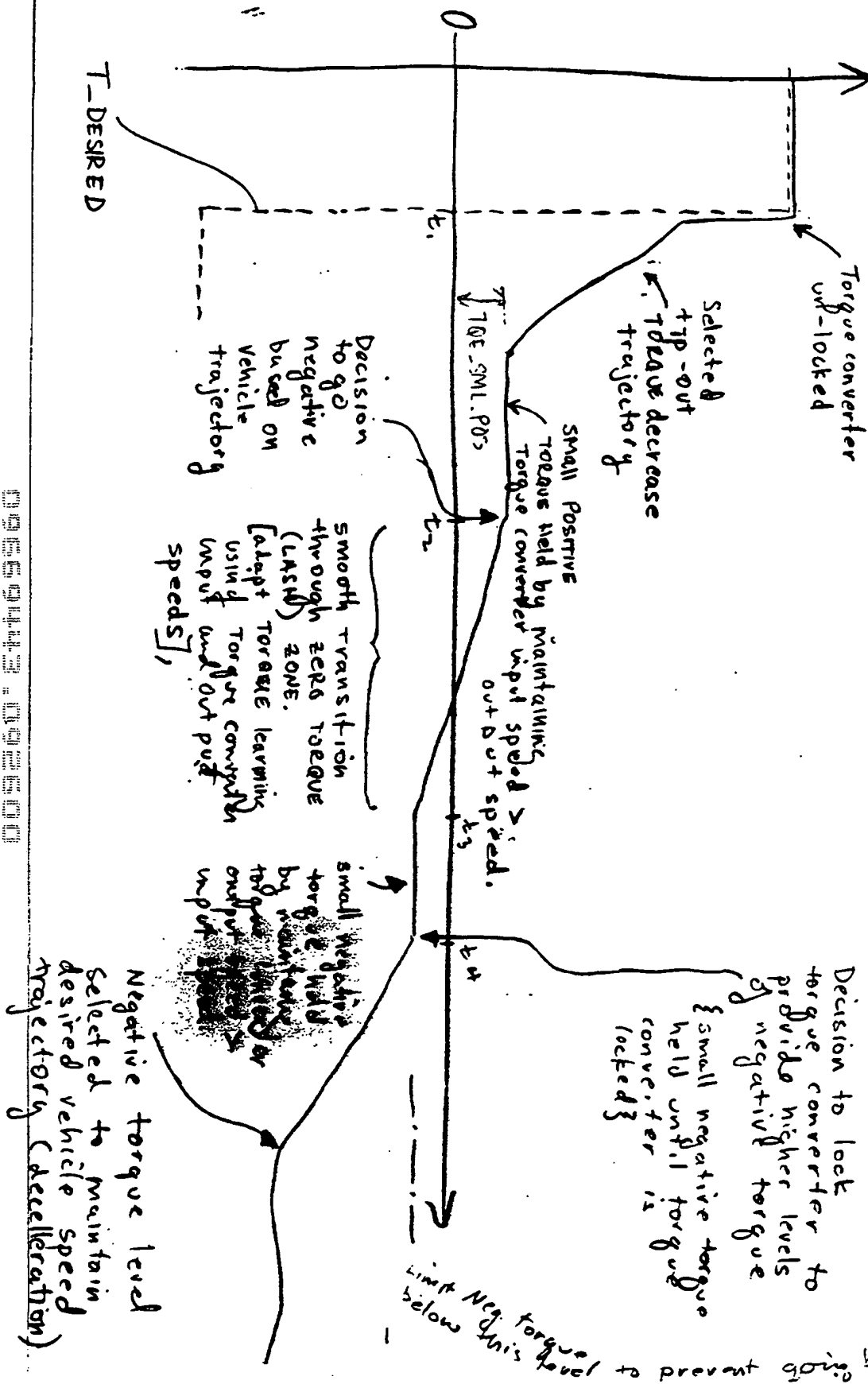
#4





## ENGINE BRAKE TORQUE

TIP-OUT CONTROL (1)



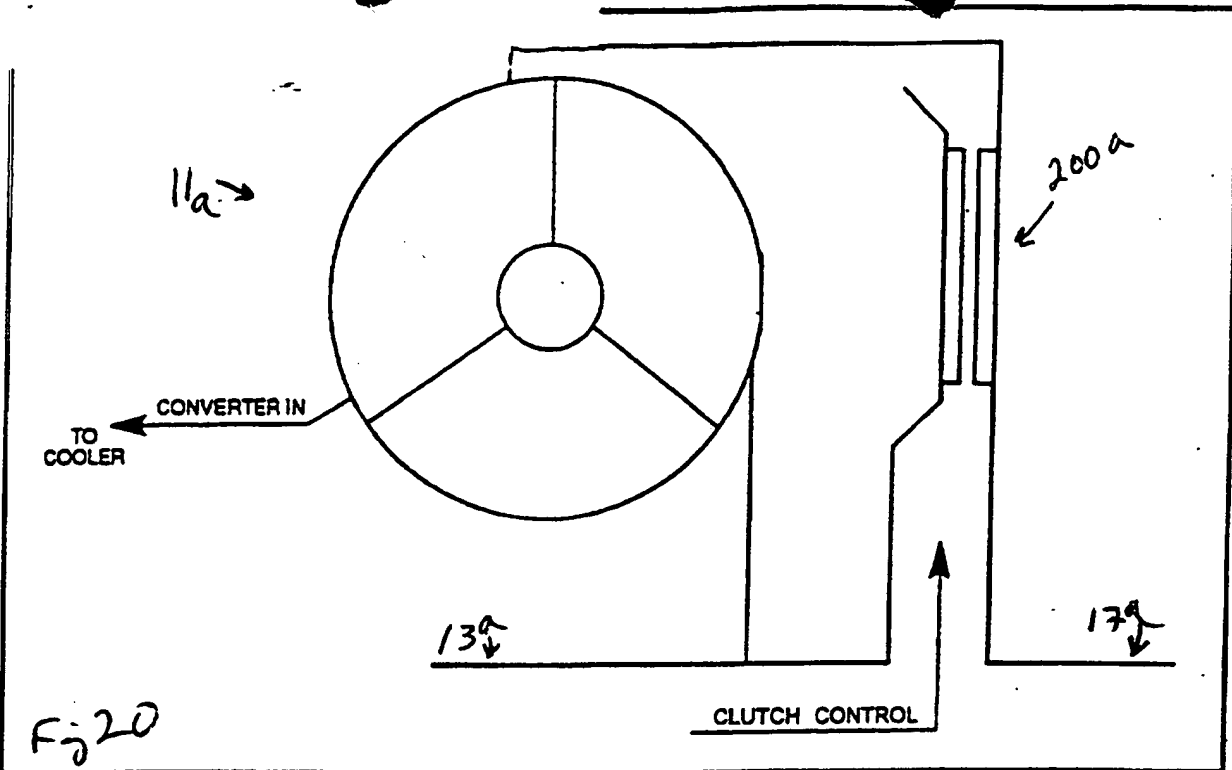


Figure 19 - Two-Circuit Unlock Converter Clutch (Disengaged)

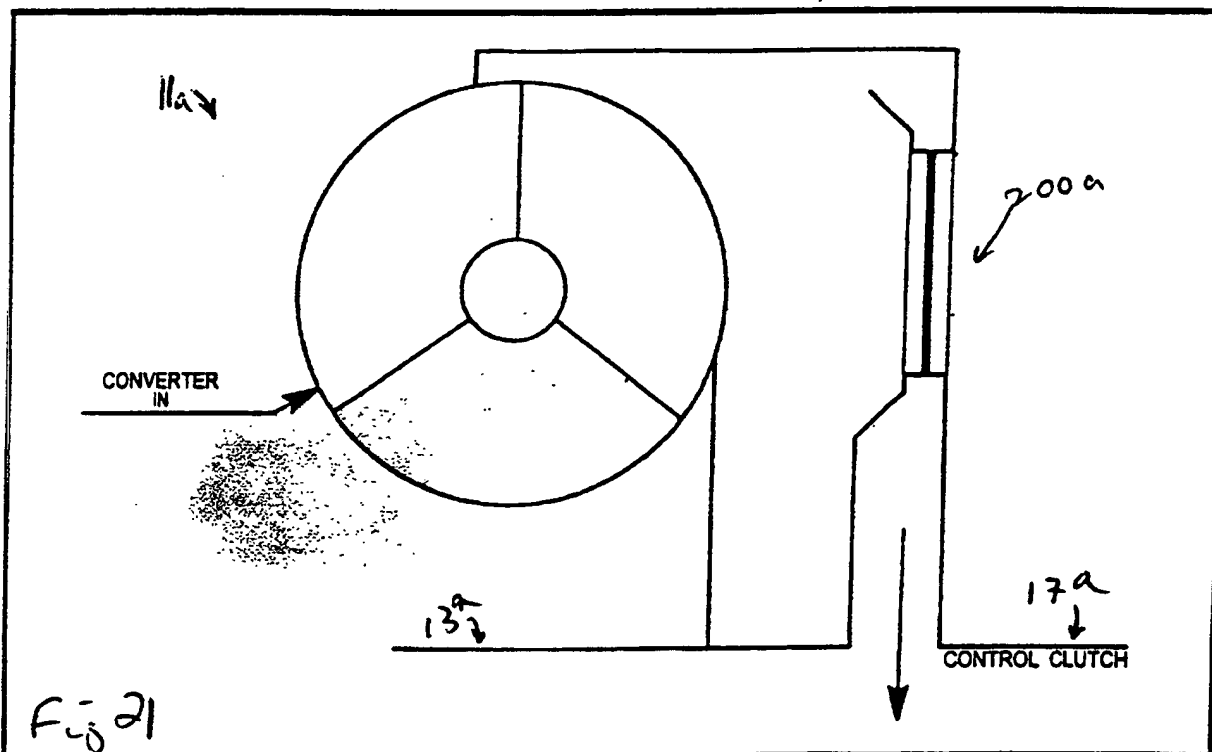


Figure 20 - Two-Circuit Lockup Converter Clutch (Engaged)

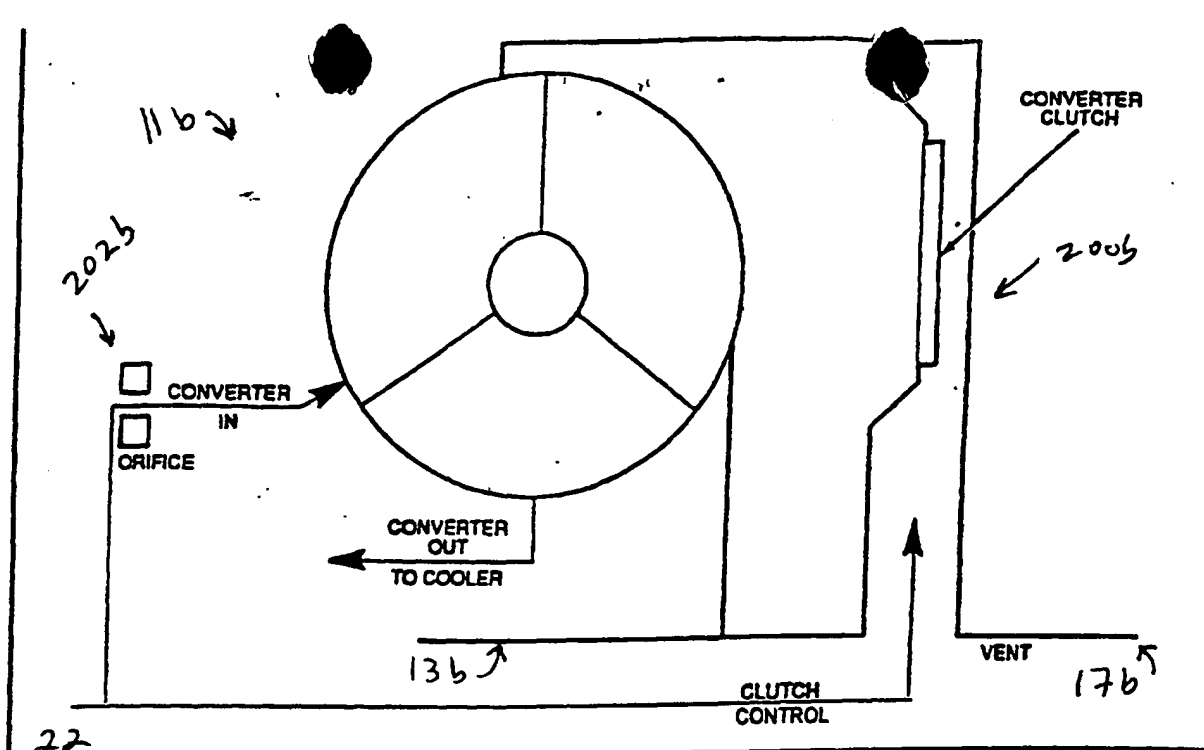


Figure 16 - Three-Circuit Unlock Mode (disengaged)

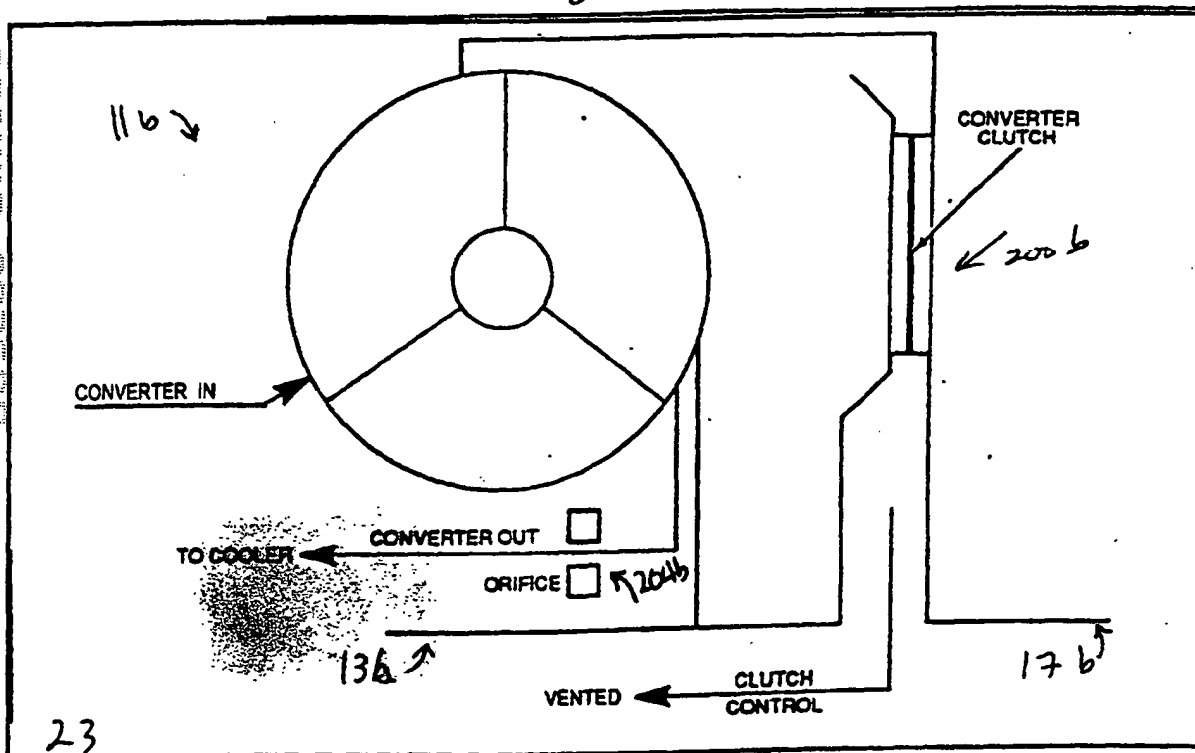


Figure 17 - Three-Circuit Lockup Mode (engaged)